Gastric and Duodenal Ulcer

The Surgeon's Approach

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• *A surgeon must have a clear conception of the indications for operation for either gastric or duodenal ulcer. He must realize that his indications must be modified by his operative mortality. The operation he carries out must be determined by several factors. It is the author's opinion that the various types of distal partial gastrectomy are those most likely to succeed and to produce the fewest undesirable postoperative sequelae.*

GASTRIC AND DUODENAL ULCER are entities which deserve separate consideration. Since a greater measure of disagreement attends the management of gastric ulcer, this type will be considered first.

It always has been a source of amazement that the methods of therapy in gastric ulcer can vary so widely, as described by various authorities throughout the country. This, if nothing else, proves that there is no fully accepted method, and that any statements—including this one—represent personal opinions. As a corollary it should be stated that such opinions throughout the country will vary, depending upon the relative abilities of the various members of the diagnostic and therapeutic team. This team must include gastroenterologist, radiologist, endoscopist, cytologist, anesthesiologist and surgeon. In centers where one of this group is dominant, the therapy of gastric ulcer is liable to become colored significantly by his opinion.

The surgeon's point of view of the therapy of gastric ulcer usually is extremely simple and probably is shared by most surgeons in this country. He believes that medical therapy of gastric ulcers is unsatisfactory except for the small proportion that are acute and heal rapidly under observation. Approximately 75 per cent are chronic or heal slowly or not at all, in a period of hospitalization. They should be treated by subtotal gastrectomy which not only promises a definitive cure of the ulcer if it is benign, but gives the only chance of cure if it is malignant.

This rather simple statement requires amplification in many respects. If it is to be accepted, it must be assumed that the operative mortality is considerably lower than the number of patients operated upon who actually have cancer rather than benign ulcer, for in only about half of the cases of cancer treated in this fashion will the patients survive five years. Furthermore, postgastrectomy symptoms must be infrequent, so that very few gastric cripples are produced.

These considerations apply to approximately 95 per cent of the cases in which the ulcer is in the distal portion of the stomach. Ulcers there can be excised by subtotal gastrectomy that is associated with a mortality of 1 to 2 per cent and with almost complete absence of postgastrectomy symptoms. Only rarely does an anastomotic ulcer develop later. All follow-up statistics to date have shown that postoperative results are excellent in 90 to 95 per cent of this group, which is significantly higher than for duodenal ulcers.

However, the 5 per cent of all gastric ulcers that originate in the juxta-esophageal area pose different problems. Here the operative mortality is higher and, if resection should involve a very high subtotal gastrectomy or total gastrectomy, the postoperative sequelae are liable to be very severe. Consequently ulcers in this area logically may be treated in a more conservative fashion. If all studies indicate the ulcer is benign, including cytological smears and gastroscopic biopsy, four to six weeks may be allowed for healing.

When the usual gastric ulcer is considered, operation is carried out at once if there is a history of chronicity or any concomitant complications such as severe hemorrhage, obstruction, penetration or perforation. For example, pain felt in the high lumbar area of the back, in the presence of a gastric ulcer, is usually due to penetration into the pancreatic capsule and should be treated by operation. In the case of the rare gastric ulcer that is entirely asymptomatic and is diagnosed for the first time by x-ray examination, operation should be done at once because of the chances of malignant disease. Ulceration, in the presence of complete histamine achlorhydria, also indicates operation, as does any

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gastric defect in a patient with pernicious anemia.

In the remaining cases there is a short history, usually of pain alone. The patients should be hospitalized and treated vigorously by a gastroenterologist. Cytologic studies and gastroscopy must be done and any evidence of cancer demands immediate operation. If such evidence is not present, operation should still be carried out unless significant progress toward healing is observed at a second examination 10 to 14 days later. If the ulcer heals completely in four to six weeks of conservative therapy, follow-up examinations are mandatory and any recurrence should be treated by operation.

CHOOSING THE OPERATION

The surgeon, then, should bear the responsibility of the treatment of about three-quarters of all cases of gastric ulcer. Let us assume then that operation is being carried out for a gastric ulcer and according to all methods of study it is benign. How shall he conduct the operation?

Here again it is wiser to divide cases into two groups, those in which the position of the ulcer indicates it can be treated by distal partial gastrectomy, and those in which the lesion is juxta-esophageal. As to ulcers in the distal stomach, it might be recalled that several years ago it was said that an operation for gastric ulcer should be the same as that for gastric cancer. Since that time so many radical and even preposterous operations for cancer of the stomach have been proposed, that this old statement is meaningless. A more exact description now is necessary. If the ulcer has not penetrated the wall of the stomach, subtotal gastrectomy should be carried out, removing the lymph nodes along both curvatures, and the greater and lesser omentum. While a margin of 5 cm. above the ulcer is desirable, it is not essential.

The stomach, however, is divided with the actual cautery. The resected stomach should then be examined by a pathologist by a frozen section if possible. In this way, in the very unusual case in which cancer is found and an insufficient amount of gastric wall has been removed, a higher resection is carried out and the anastomosis completed.

Not infrequently the ulcer will have perforated onto the body or tail of the pancreas. Here the surgeon may prefer to open the stomach, inspect the lesion within, take a specimen for biopsy and be guided in the extent of the resection by the pathologist's report. In case of doubt, it is advisable to adopt a conservative approach. Cancer of the stomach that involves the pancreas is practically never cured. On the other hand, to resect a portion of the pancreas in a case of benign ulcer may result in the death of the patient or in difficult convalescence when otherwise there might have been prompt recovery.

As to ulcers in the juxta-esophageal area, opinions are in a state of flux. Let us assume again that all preoperative studies have indicated a benign ulcer. Some years ago it appeared that the answer to this problem would be a proximal partial gastrectomy. This necessarily involved bilateral vagotomy, resection of the cardia and anastomosis of the esophagus to the antrum of the stomach. The end results of this operation as performed in the Massachusetts General Hospital for benign ulcer were presented recently by Sweet.[13] They indicate, just as do other reports from different sections of the country, that the mortality is relatively high and that postresection symptoms are not uncommon.

Recourse therefore should be had to a different type of operation, and the best one at present appears to be that described by Madlener.[9] Here the high gastric ulcer is not removed, but a distal subtotal gastrectomy is carried out. Healing results later because the gastric antrum and much of the acid-secreting area have been removed. This operation has given uniformly good results when it has been done for ulcer according to Maurer[10] and Colp,[5] each of whom has reported a significant number. It obviously has given uniformly bad results when it has been carried out for cancer; hence, intragastric biopsy and frozen section should be employed in every case in which this operation is used. Postoperatively careful x-ray examination and follow-up observation are necessary to be sure that the lesion heals.

DUODENAL ULCER

Duodenal ulcer poses a different problem than gastric ulcer. Here there is some disagreement among physicians and surgeons about the patients who require operation. There is even more internecine warfare among surgeons about the selection of the type of the operation that is to be carried out.

It is not easy to deal succinctly with the various indications for operation for duodenal ulcer. The problem is simplified if discussion of the emergency operations for suture of perforations is omitted and consideration is given only to operations performed for definitive cure of the ulcer. Attention should be called again to the very complete and important study carried out by Moore[11] and associates at Massachusetts General Hospital a few years ago. Every patient who entered the ward service between 1942 and 1946 was followed carefully up to mid-1949. It was found that the mortality rate of those treated by subtotal gastrectomy was 2.86 per cent. This was an operative mortality and occurred at once. The mortality rate of those treated conservatively, surprisingly enough, showed no significant

difference, but was due to the complications of ulcer spread over a five-year period. Meanwhile, those treated by subtotal gastrectomy were, except for a very small percentage, asymptomatic, leading active lives; of those treated conservatively, about three times as many had an unsatisfactory result in symptomatic or economic terms. Moore and associates then attempted to define the patient with "virulent" ulcer, who ought to have operation without delay. It is possible to pick out, by their definition, many patients who should have operation but are limping along on a conservative regimen, living for their ulcers, rather than leading normal lives.

In brief it seems logical that patients with a duodenal ulcer who fall within any of the following categories should have a definitive operation for cure unless operation is contraindicated by other considerations: (1) Those who have had a perforation and a prolonged period of ulcer symptoms before or after the perforation. (2) Those who have had an attack of obstruction or in whom severe deformity of the duodenum is observed roentgenographically. (3) Those who have had a single massive hemorrhage or two or more moderate ones. (4) Those who have had to be hospitalized two or more times for the treatment of pain, or who continue to suffer despite careful attention to a gastroenterologist's advice. It is also of interest that in the previously mentioned report by Moore and coworkers, it was noted that persons in whom ulcer symptoms developed before the age of 20 or after the age of 70 also usually had "virulent" ulcers.

From these indications it is apparent that many more patients with ulcer should be operated on without delay, yet many physicians, and surgeons as well, are a little more conservative in their approach. There are many patients who, on the appearance of the first symptoms of ulcer, rush to a surgeon. It would seem a good general rule that for such patients operation should usually be avoided, for they vision operation as an immediate escape from their underlying difficulties and assume that once they have recovered from the operation they will be normal again. They will be sadly disillusioned. In general terms a patient should be made to understand his ulcer diathesis and learn how to treat it before operation is carried out. It might be stated parenthetically that a certain period of suffering before operation results in much more gratitude to the surgeon and fewer complaints after the operation.

One must not forget that an ulcer is merely an accompanying finding in many patients with psychoneurosis or, as Sarah Jordan has said, the patient is intractable, rather than the ulcer. Although their complaints may be epigastric, proper surgical treatment for ulcer will not cure them. Whenever compensation neurosis is suspected, the surgeon should not be too aggressive. A very interesting note in this regard was supplied by Carmody,[4] who reported that two patients with very severe symptoms from duodenal and anastomotic ulcers had lobotomy and the ulcers then healed rapidly.

SELECTING OPERATION FOR DUODENAL ULCER

Assuming that an operation is to be done, let us now consider the type of operation to be carried out. The surgical literature is now full of claims and counter-claims and several new operations are being tested. It is no wonder that young surgeons are confused completely as to the approach to any specific case.

To make the author's position clear at once, let it be noted that he is biased in his opinion, probably no more so than anyone else, but definitely biased. He believes a distal partial gastrectomy in which not over 75 per cent of the stomach is removed is a wonderfully effective operation. He recalls a host of unbelievably grateful patients. The words of an internist who has observed many of these patients for many years after operation sound more than faintly musical when he says that subtotal gastrectomy is the finest operation ever performed by the abdominal surgeon. He is sure that many of the complaints about the operation have been exaggerated. Every medical student can recite all the variations of the dumping syndrome, listing enough symptoms so that if they all were significant a good proportion of so-called normal persons must have the condition. The surgeon agrees that the patient who has had a subtotal gastrectomy and flushes after he has had a glass of chocolate milk, has a variant of a dumping syndrome; but the surgeon is not sure that it is important, particularly if the patient has been relieved of his serious symptoms—and does not like chocolate milk. The surgeon hears that his patients cannot gain weight after a gastrectomy, despite voracious appetites. As a philosopher he may look at his own expanding anatomy, view his innumerable obese patients who are condemned to live on salads and wonder which people are happiest.

On the other hand, even though the complaints about gastrectomy have been exaggerated, every surgeon will admit that there are a few patients who are unhappy after it. In a series of patients followed by the author several years ago, excellent or very satisfactory results were noted in approximately 88 per cent of those who had had this operation. Anastomotic ulcers developed in 3 per cent of the patients, 3 per cent had an attack of postoperative bleeding without known source and 3 per cent had severe weight loss or various troublesome digestive symptoms including the dumping syndrome. As

time went by the patients with digestive symptoms improved. For example, a woman who had been coached by her two physicians for nearly two years about the dumping syndrome before gastrectomy, took exactly two years to get over it following operation, and from then on she was entirely asymptomatic.

It is a personal opinion, and this is not susceptible of proof, that one of the reasons partial gastrectomy is regarded with disfavor in some quarters is that such radical resections have been performed in some localities that postgastrectomy symptoms have overshadowed the benefits of the operation. The greater the amount of stomach removed, the less is the chance of stomal ulcer, but also the greater the chance of postgastrectomy symptoms or severe weight loss. The surgeon must attempt to leave enough stomach to strike a balance; it is very rarely that over 75 per cent should be removed. It should be less if the patient is a woman, or one who has always been thin or who has a greatly distended stomach at the time of the operation. If symptoms are out of proportion to the amount of pathologic change demonstrated—as, for example, when very little deformity is shown by x-ray or at operation despite a history of many years — the resection should be more conservative.

NEW COMBINATIONS

The question then arises as to whether or not a more satisfactory operation than partial gastrectomy has been devised. Out of some fifteen operations that have at one time or other been used for ulcer, the greatest interest, of course, has attended the operation of vagotomy. The emphasis upon this operation has gradually shifted. Vagotomy alone soon was abandoned. The next modification was that of vagotomy and a short posterior gastroenterotomy. Because of Dragstedt's[6] enthusiasm, some surgeons still employ it. The author's results have not been good with either; results were unsatisfactory in 40 per cent of a series of 27 cases in which the operation was done in 1946 to 1947, so the operation was discontinued except for anastomotic ulcer. A recent follow-up observation of a patient typifies the reasons for this discouragement. Almost absolute atonicity of the stomach developed after vagotomy and posterior gastroenterostomy, and no acid secretion occurred after intravenous administration of insulin. Five years later the patient reentered the hospital with serious bleeding from a reactivated duodenal ulcer and the stomach contained 60 units of free acid after histamine was given. A recent complete follow-up of the entire Massachusetts General Hospital series of 132 cases by Brooks and Moore[3] led them to believe that the operation should be abandoned.

Most hopeful of the new operations is a combination of a relatively conservative resection with a vagotomy, as advocated by Smithwick.[7] He expressed the hope that it will combine the good features of both—that is, prevention of loss of weight and a reduction of the dumping syndrome. It is to be hoped that it will do that rather than combining the bad features, namely, the higher operative mortality of gastrectomy and the occasional persistent diarrhea following vagotomy. A few more years will be necessary to evaluate it as well as other operations being carried out in various sections of the country.

Harkins'[8] emphasis on extension of the Billroth I operation is very important, especially with regard to thin or female patients. It is certainly applicable to many gastric ulcers, but has not been accepted generally for duodenal ulcers. Wangensteen's operations that are designed to reduce the acid-secreting areas of the stomach, as well as other experimental procedures that are being carried out elsewhere, will be watched with great interest.

Theoretically, a combination of 75 per cent gastrectomy and vagotomy should provide the greatest protection against recurrence of ulcer. Several series of these operations have been compared with a central series in which the vagotomy had been omitted. A typical study was one reported by Palumbo.[12] He found that achlorhydria was produced regularly by the combined operation but that the persistent diarrhea that often followed vagotomy made its addition to subtotal resection questionable.

Meanwhile, the surgeon who wishes to use the best method to cure his patient of duodenal ulcer had better apply accepted techniques. Recently an eminent gastroenterologist characterized surgeons as the greatest faddists in the whole field of medicine. He is probably correct, and, for the moment, let us not be swept off our feet by all of these new developments. So many operations for duodenal ulcer have come and gone that some which now seem very attractive may be based on fancy rather than on fact. It may be that the surgeon who chooses partial gastrectomy—the same operation now that he did a decade ago—may not be doing so simply because he is so obtuse that he cannot see anything better. He may actually be a little closer to the answer.

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